

We claim:

1. A nanoparticulate preparation of a pharmaceutical or cosmetic active ingredient with a core/shell structure, in which the X-ray amorphous active ingredient is present in the core together with one or more polymers, and the shell consists of a stabilizing coating matrix.
2. A preparation as claimed in claim 1, in which the core has at least two separate phases, one phase consisting of amorphous particles of the active ingredient, and the other phase being a molecular dispersion of the active ingredient in a polymer matrix.
3. A preparation as claimed in claim 1, in which the core has at least two separate phases, one phase consisting of amorphous active ingredient, and the other phase being a polymer matrix free of active ingredient.
4. A preparation as claimed in claim 1 or 2, wherein the core polymers are polymers which are suitable for pharmaceutical and cosmetic applications and which are insoluble or only partly soluble in water.
5. A preparation as claimed in any of claims 1 to 4, comprising polymeric peptides as coating matrix.
6. A preparation comprising gelatin as coating polymer.
7. A preparation as claimed in any of claims 1 to 5, comprising casein or sodium caseinate as coating matrix.
8. A preparation as claimed in any of claims 1 to 7, in which the core/shell structures have an average particle diameter between 0.01 and 2 μm .
9. A hydrosol of a preparation as claimed in any of claims 1-8.
10. A hydrosol as claimed in claim 9, in which the sizes of the hydrosol nanoparticles increase by less than 50% in the first hour after preparation of the hydrosol.

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11. A process for producing preparations as claimed in any of claims 1 to 4, which comprises preparing a solution of the active ingredient in an organic solvent which is at least 10% by weight miscible with water, mixing this solution with the core polymer or a solution of the core polymer in an organic solvent, and bringing the resulting mixture into contact with an aqueous solution of the coating polymer.

10 12. A process as claimed in claim 11, wherein a precipitation of core particles takes place on mixing the active ingredient solution with the solution of the core polymers.

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15 13. A process as claimed in claim 11 or 12, wherein the second virial coefficient for the core polymers assumes a value below zero on mixing with the solution of the active ingredient.

20 14. The use of a preparation as claimed in any of claims 1 to 7 for producing pharmaceutical and cosmetic presentations.

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Nanoparticulate core/shell systems and the use thereof in
pharmaceutical and cosmetic preparations

5 Abstract

Nanoparticulate preparations of pharmaceutical and cosmetic
active ingredients with a core/shell structure in which the X-ray
amorphous active ingredient is present in the core together with
10 a polymer matrix, and the shell consists of a stabilizing coating
matrix.

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